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ABSTRACT

The purposes of this study were (1) to determine to what extent sixth grade children from two North Carolina counties were learning economic concepts as a result of their teachers' inservice activity and general preparedness; and (2) to identify what socio-economic, demographic, and attitudinal factors might contribute to a child's knowledge of economics. The Basic Economics Test (BET) was used to measure the extent of economic literacy. Two survey instruments accompanied the BET. Each served to capture the various teacher-student characteristics that might contribute to the child's understanding of economics. When the data were compared between the two counties and the norming sample, it was found that North Carolina children were at or slightly below par compared to their peers throughout the nation. When the data were disaggregated by student-teacher characteristics and test scores, a clear and definitive pattern emerged. With respect to student characteristics, such variables as family income, family education, the extent of a child's environmental awareness (Family Travel), and race demonstrated a positive correlation, based upon a priori expectations, among the several assigned cells. This finding was true regardless of the county under investigation. Various teacher characteristics yielded interesting correlations between select categories and the children's average score. The findings illustrated a direct relationship between the amount of time an instructor expended teaching social studies in general and economics in particular. Several tables are included. (Author/JEH)

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Student-Teacher Characteristics and Economic Literacy: A Middle-Grade Study

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ABSTRACT

The purposes of this study are (1) to determine to what extent sixth grade children from two North Carolina counties were learning economic concepts as a result of their teachers' inservice activity and general preparedness; and (2) to identify what socio-economic, demographic and attitudinal factors might contribute to a child's knowledge of economics. The Basic Economics Test (BET) was used to measure the extent of economic literacy. Two survey instruments accompanied the BET. Each served to capture the various teacher-student characteristics that might contribute to the child's understanding of economics. When the data were compared between the two counties and the norming sample - a measure of the economic literacy of the sixth grade population - it was found that North Carolina children were at or slightly below par to their peers throughout the nation. When the data were disaggregated by student-teacher characteristics and test scores, a clear and definitive pattern emerged. With respect to student characteristics, such variables as family income, family education, the extent of a child's environmental awareness (Family Travel), and race demonstrated a positive correlation, based upon a priori expectations, among the several assigned cells. This finding was true regardless of the county under investigation.

Various teacher characteristics also yielded interesting correlations between select categories and the children's average score. The findings illustrated a direct relationship between the amount of time an instructor expended teaching social studies in

general and economics in particular. When the authors' attention was turned to specific schools within one system, the evidence suggested that the method in which social studies (and its sub-component, economics) is taught also effects the learner's level of economic literacy. The evidence examined throughout the paper supports the fact that if given the opportunity, young people can learn economics.

Student-Teacher Characteristics and Economic Literacy: A Middle-Grade Study

There has been considerable concern expressed by educators, elected officials and the general public about the apparent lack of economic literacy on the part our nation's school children. In an effort to address this problem some states have chosen to mandate to local Board's of Education that economics be taught during the learner's secondary years of schooling. Other states have required that school systems teach young people only the rudiments of the free enterprise system at some time or during the student's K-12 years. Unfortunately, at this moment there is no national consensus as to what, how, and when economics and the free enterprise system are to be taught.

More importantly, often is the case where little or no monies have been appropriated by state legislatures to train the teachers in economics education in order that they might meet the charge placed upon them. As a result many local school systems have had to allocate general staff development funds for the training of their teachers in economics. Some school districts have taken the initative by committing themselves to the Development Economic Education Program (DEEP) and setting aside funds on a regular and on-going basis. Other school systems have chosen to participate in economics education workshops, summer institutes and other oriented economics program only after other staff development needs have been met.

Regardless of which approach the school authorities choose to employ, one question that has often been asked: "Are students

benefitting from economics training received by their teachers who attend economics education workshops and seminars and are there any incidental factors that might further affect that child's understanding of economics?" This question and many others were addressed by the authors during the 1983-84 academic year.

The purposes of this study are (1) to determine to what extent sixth grade children from two North Carolina counties were learning basic economic concepts as a result of their teacher's inservice activity and general preparedness; and (2) to identify what socio-economic, demographic and attitudinal factors might contribute to a child's knowledge of economics.

To meet the first objective we first recorded and then compared the average score attained on the BET for the two counties under investigation. We also compared the average score for both school systems with those pupils who sat for the norming of the BET. It was our belief that this simple and straightforward procedure would provide those of us in North Carolina with an approximate measure of where our children stood in relation to their peers throughout the state and the nation. To meet the second, and perhaps the most important component of the study, we disaggregated the data by student-teacher characteristics and then compared the respective BET scores between counties and within counties. Our effort here was to see if any factors might emerge that could "explain" why some children might score higher on the BET than what other students might record.

PREVIOUS STUDIES

The factors examined in this study have been analyzed over many years by various authors. Many authors have researched the school's committment to economics (Soper and Brenneke, 1981; Walstad and

Soper, 1982; Luker, 1984) and the affect of a teacher's economic training on classroom performance (Walstad, 1980; Greenfield, 1982; Chizmar and Halinski, 1983; Schober, 1984). The relation between age, race, and sex and students' achievements has also been well explored (de Hernandez, Marek, and Renner, 1984; Reynolds, Willson and Chatman, 1984). Student attitudes toward economics have been examined in Walstad (1980), Walstad and Soper (1982), and Soper and Walstad (1983). Finally, many have sought to describe the relationship between the socio-economic environment of the student and his performance in the classroom. Iversen and Walbert (1982) point to socio-economic status indicators. We have included the variable "vacation experience" in an effort to capture the former effect. Luker (1982) argued, however, that variables such as the students mental ability, socio-economic class and racial ethnic background, might influence the student's ability to learn basic economic concepts.

The novelty of the present study lies in the combination of the individual variables to investigate the influences which affect the learning of economics. As such, it provides many answers to questions raised by educators and researchers alike.

COLLECTION OF THE DATA

The groups to be examined consisted of all sixth grade children from two North Carolina counties (McDowell and Iredell County)[1]. During the early part of the school year, the children from both school districts sat for the Basic Economics Test (BET), Form A.[2] The score received on the BET was to serve as the primary measure of the child's knowledge, understanding, and application of basic economic concepts. During the latter part of the school year, the children

from McDowell County sat for Form B of the BET. This instrument was to serve as a post-test which would measure the relative improvement in the students' knowledge of economic concepts.

After each child finished Form A of the BET he was asked to respond to a questionnaire that sought to capture various demographic and attitudinal data. It was our belief that these attributes might have some influence on the child's ability and incentive to learn economics.

A second survey instrument was developed and circulated to all fifth and sixth grade teachers in both school systems. It consisted of two parts. One section of the document requested that the instructor provide information about her students' socio-economic background, a factor that could further affect the learning of the discipline. Emulating a procedure employed when school officials administer the California Achievement Test (CAT), the teacher was asked to provide an estimate of the child's family income and the highest academic level attained by that individual's parent(s). The second component of the questionnaire sought information detailing the extent of the instructor's economic training and the time spent teaching economics or social studies in the classroom. The purpose of this instrument, therefore, was to determine what teacher characteristics might contribute to the absolute value of a student's raw score.

Data collected from the seventeen McDowell County teachers and the twenty-eight Iredell County instructors and the results of the Form A BET-SURVEY instruments provided a total of 555 and 766 observations respectively. Five hundred and eleven McDowell County students sat for Form B of the BET.

ANALYSIS OF THE DATA

BETWEEN NORTH CAROLINA COUNTIES AND THE NORMING SAMPLE

Out of a possible 38 points the average raw score for all sixth grade children from McDowell and Iredell counties were 16.93 and 18.54 respectively.The scores between the two school districts were statistically significant at the 0.001 level. Some in-state school administrators, however, will argue that it is meaningless to compare scores as an indicator of one's economic knowledge when the students of some counties will ordinarily score below others in reading ability and mathematical aptitude. An appropriate response would be to adjust the scores of those counties that differ from some stated norm. Their point is well taken.

To provide a more meaningful comparison between the two groups, the BET scores were adjusted for each child in Iredell County.[3] The newly adjusted average yielded a value of 16.65. The new difference between the two scores of .28, however, was not statistically significant.

In an effort to provide more meaning to the average raw test scores of both North Carolina counties, it was decided to compare these scores with the average test result of those children from the various school districts who participated in the norming of the BET in May 1979. Although, the latter students represented only a sample, they are believed to be representative of the population as a whole. Hence, the results from the national sample could provide local school systems with an approximate measure of the extent of economic knowledge of all children in the sixth grade. The results are shown in Table I. It is readily apparent that children from both North

Carolina counties scored significantly below those pupils who sat for norming of the BET. However, upon closer scrutiny the difference may not be as great as it appears. First, 80 percent of the children in the norming sample were believed to belong to upper or middle-class families. This figure would be somewhat lower for both Iredell and McDowell County. If family status is a factor in the learning process, the test scores for the children in the two North Carolina schools would be biased downward. Second, the BET was given to the children sitting for the norming sample toward the latter portion of the school year. The same examination for the present study was administered during the early part of the academic school year. The time advantage afforded the students in the national sample could favor their superior test score. Third, in neither county are there any large metropolitan communities. Indeed, both counties are relatively uninhibited and could thus be viewed primarily as rural counties. Therefore, it is inaccurate to compare counties of this make-up with a norming sample that might have large urban cities as part of its whole. A more meaningful evaluation would involve comparing the individual North Carolina counties' score with the norming samples' rural community category average test score of 18.37. If this comparison is more appropriate, then at least one North Carolina county (Iredell County) would emerge at or above par with its unadjusted raw score of 18.54.

STUDENT CHARACTERISTICS: BETWEEN COUNTIES AND AMONG CATEGORIES

Since a major thrust of our study was to learn if economic cognition was a product of a child's inherit qualities, family

background and the extent of his teacher preparedness, we disaggregated the data by student-teacher characteristics and test-scores. These test scores were then compared between the two counties as well as within each county. The findings were striking. As Tables IIA & IIB clearly indicate, children in Iredell County once again out-scored their counterparts in McDowell county for most categories shown. What is of considerable interest, however, is the comparison of test scores among given categories. Regardless of the count under investigation, a clear and definitive pattern emerged. There is a positive correlation between such socio-economic variables as a student's family income and the educational attainment of his or her parent(s) and that child's test score (Table IIA). This is true regardless of the county being examined. Parents who enjoyed status and position due to their academic achievements or earning power will often be perceived as role models to be emulated by their children.

Furthermore, for most categories reported there is a direct relationship between the extent of preparedness of the child's teacher and that student's test score (Table IIB). This is particularly true of Iredell County. With the exception of the number of economics courses the teacher successfully completed in college, each grouping reported a relatively higher average test score for children whose teachers had the greatest inservice preparation and instructional time than for those children whose teachers were not as prepared or limited their amount of economics education in the classroom. These findings are of considerable interest to all economics educators who often wonder if participants in economic workshops, summer institutes, or special economics programs, are assimilating the information provided

them and using this increment in human capital to improve the economic knowledge of their own students. Although far from being absolutely conclusive, the answer does appear to be in the affirmative.

MCDOWELL COUNTY, THE NORMING SAMPLE AND THE PRE-AND-POST TEST

To pursue the question as to whether teacher in-service and the extent of economics education in the classroom significantly affects the child's comprehension of basic economics, the researchers next narrowed their study to one school system. Since McDowell County had demonstrated the lowest relative unadjusted test score on Form A of the BET, this school district was chosen for future investigation.

After Form A of the BET (the pre-test) was administered in October 1983, additional inservice were provided to all sixth-grade teachers in McDowell County. Furthermore, some schools within the county were visited by economics educators to provide whatever assistance the teachers requested. Near the end of the school year, Form B of the BET (the post-test) was given to measure any improvement in the children's performance. Since Iredell County students were not tested at this time, the researchers first compared the change with the students who sat for the norming of Form B of the national Test and then with the results reported on the McDowell County pre-test (Form A).

The resulting change in test scores of McDowell County pupils and the National norm was dramatic. For the two categories offered by the national sample, "with instruction" and "with 13 plus weeks instruction", McDowell students on average received higher marks than did the children represented in the norming sample.[4] Scores of 20.01

and 23.43 were recorded by the North Carolina students; whereas, test results of 19.76 and 22.00 were reported in the national sample for the categories of "with instruction" and "with 13+ weeks of instruction" respectively. However, only the latter category was statistically significant at the 0.007 level.

Even more interesting was the increase in BET scores of Form B over Form A for the county's sixth graders. Tables IIIA & IIIB clearly illustrate that for all socio-economic student characteristics and for the vast majority of teacher characteristics, there was a profound and unusually statistically significant increase in student scores for most categories reported. Furthermore, a pattern identical to one reported in Tables IIA and IIB emerged: a positive correlation between student scores and student-teacher characteristics.

It is apparent by the scores reported from Form B that there was a marked improvement in the extent of a student's knowledge, understanding and application of basic economic concepts. Some of the explanation for the increase could be found in the willingness of the teacher to adequately prepare herself for the teaching of economics and from the amount of class time she consumes in the delivery of that knowledge. To pursue this belief further the authors chose to compare the extent of teacher preparedness by measuring the extent of preparation of the child's sixth grade teacher (for whom much of his learning of economics is reflected in the test results of Form B), with those of his fifth grade teacher (those instructors who contributed much to his understanding of economics as indicated by the test results earned from Form A). Table IV reports the comparison.

With the exception of only one category shown (Semester Hours

Earned in Economics), the sixth grade teachers "out-performed" their fifth grade collegues. For example, additional in-service training obtained during the academic year plus economics education acquired in previous periods rose by over 5 percentage points for the sixth grade teachers. Further there was more time spent teaching economics in the latter grades in both absolute and percentage terms. However reflective these figures are caution does appear to be in order. They do not take into account intangibles. That is, each teacher was aware of the fact that her class was to sit for a post-test at the end of the school year. It is reasonable, therefore, to assume that this awareness contributed to some increase in the intensity of instruction.

Another factor which probably plays a role in the in-class delivery of economic subject matter lies in the timing of the workshops given. In-service offered during the summer months does not carry the same timeliness as in-service offered during the school year. Teachers who receive instruction useful for the teaching of economics are generally eager to disseminate the information received as quickly as possible. Such is probably not the case of continuing education provided when school is not in session. With respect to the pre-test, much of the in-service for classroom teachers was provided during the summer months. For those students sitting for the post tests, their teachers were given additional training during the school year.

The point to be made is straightforward: given the fact that teachers were aware of an impending examination and given the belief that in-service has a more immediate effect if offered during the

school year, teachers, both consciously and unconsciously, probably intensified their instruction of economics to some degree. How much of an increase from the "norm" is unknown. Nonetheless, much of the evidence given does suggest that given the opportunity middle grades children can learn economics.

DIFFERENCES AMONG MCDOWELL COUNTY SCHOOLS

In order to determine if there were any statistical differences among the test scores for the eight McDowell County schools and to possibly determine what factors may lead to these differences, a Duncan Analysis of Variance test was conducted. The results yielded two distinct groupings which can be seen in Table V. Although there is a range between the highest average score and lowest average score of 3.293 for schools in group I, there emerges no statistical difference among the four institutions. The same statement can be made for schools in category II. However, there is statistical difference between the two groups.

Is there any explanation that might suggest a reason for the difference between the two groups? Perhaps there is one. Of the eight middle grade schools in McDowell County, three schools taught social studies in a "blocking" fashion. That is, one instructor within each school is usually given the sole responsibility for the teaching of social studies. Of the schools which employ this method instruction, all are in Category I. This fact does imply that instruction in this mode can have a significant impact on the extent of student learning. Clearly three schools are much too small of a "sample" to provide any definitive conclusions. The suggestion, nonetheless, remains

noteworthy.

One observation that yielded unexpected results, concerns the impact of classroom visits by economics educators. In addition to in-service training given to all sixth grade teachers during the late fall, some teachers were visited in the classroom during the last of the school year and on an ad hoc basis by economic education personnel. The purpose of the visits was to provide any assistance called for by the respective teacher.

The test scores for those children whose teachers were visited provided some interesting results. Of the six teachers contacted, only one instruction taught at a school that was in category I. However, since the visits were conducted late in the school year, the effect may have been different had the timing been otherwise. Nonetheless, it would appear that further study on the contribution of classroom visitation is warranted.

SUMMARY

The evidence examined throughout the paper supports the fact that if given the opportunity, young people can learn economics. Teachers who are better equipped as the result of in-service training and other measures of preparedness seem to have students who possess an "acceptable" level of economic cognition. Furthermore, the data suggests that clear and identifiable student characteristics can influence his level of economic understanding.

TABLE I

Adjusted Basic Economics Test Score
Between Countries and the Norming Sample

	Test A		
Statistic	(1) Iredell	(2) McDowell	(3) Norming Sample[a]
Score	16.65	16.93	20.29
S. D.	5.76	5.71	6.18
N	766	555	4462

T-Statistic between (1) and (2) = .875 P≥.1922

T-Statistic between (2) and (3) = 12.92 P≥.0001

[a]Recorded from the Basic Economics Test Examiners' Manual-"With Instruction", p. 6.
This score represents the average test results for grades 4 - 6. Sixth grade children recorded a score from 20.96 (males) to 21.96 (females). p. 12.

TABLE II A

A Comparison of Unadjested Basic Economics Test Scores by Family Vacation, Family Income, Family Education, Sex and Race: Student Characteristics

	McDowell	Iredell
Family Travel:		
Often	17.35	19.31
	(5.70)	(6.07)
Sometimes	16.63	18.15
	(5.73)	(6.63)
Never	16.00	15.44
Family Income:		
Less Than $5,000	14.66	14.27
	(5.58)	6.55
Between $5,000-$15,000	16.25	18.08
	(5.70)	(6.51)
Greater than $15,000	18.11	19.13
	(5.54)	(6.20)
Family Education:		
Less than 8th grade	12.85	16.36
	(4.90)	(6.81)
8th grade thru 11th grade	14.29	16.95
	(5.34)	(6.57)
High School	17.73	18.32
	(5.32)	(6.30)
Some College	18.89	20.92
	(5.84)	(5.87)
Sex:		
Male	16.94	18.18
	(6.17)	(6.34)
Female	16.91	19.04
	(5.16)	(6.42)
Race:		
White	17.01	19.15
	(5.74)	(6.29)
Black	15.82	15.47
	(5.24)	(6.00)

Note*-Test scores are reported first followed by the standard deviations are in parenthesis.

TABLE II B

A comparison of unadjusted basic economic test scores by college prepartion, employment preparation and instructional time: Teacher Characteristics

Category	McDowell	Iredell
College Preparation:		
Social Studies Courses		
18 or more semester hours	17.11	19.72
	(5.49)	(7.29)
Economic Courses:		
0-1 Courses	16.81	18.90
	(5.70)	(6.67)
2-3 Courses	17.88	17.96
	(5.54)	(5.84)
4-5 Courses	15.74 [a]	18.26
	(4.57)	(6.15)
Employment Preparation:		
Economic In-Service-		
0 Hours	16.59	17.52
	(5.67)	(7.02)
1-10 Hours	17.35	18.35
	(5.57)	(6.34)
11 + Hours	17.02	20.24
	(5.69)	(6.32)
Instructional Time:		
Percent Teaching Social Studies		
0-10 %	18.40 [b]	17.48
	(6.52)	(5.98)
11-15 %	17.28	17.81
	(6.51)	(6.01)
16-20 %	17.12	20.31
	(5.25)	(5.71)
21 + %	18.28 [c]	18.45 [d]
	(4.92)	(6.49)
Instructional Time:		
Percent Teaching Economics		
(as part of Social Studies)		
0-5 %	17.35	18.96 [e]
	(6.21)	(5.09)
6-10 %	16.83	18.57
	(5.91)	(5.23)
11-20 %	17.46 [f]	18.31
	(5.23)	(6.45)
20 + %	--	19.08
	--	(5.36)

Note* Standard Deviations are reported in parenthesis.

TABLE II B (cont.)

A Comparison of Unadjusted Basic Economic Test Scores
By College Preparation, Employment Preparation
and Instructional Time:
Teacher Characteristics

Hours Teaching Economics	McDowell	Iredell
10-25	16.74	19.94
	(5.64)	(6.21)
26-50	------	16.81
	------	(5.62)
County Average	16.92	18.54
	(5.71)	(6.41)

[a]The number of observations is 21 (one class).

[b]The number of observations is 64 (two classes).

[c]The number of observations is 53 (two classes).

[d]The number of observations is 29 (one class).

[e]The number of observations is 23 (one class).

[f]Although the number of observations was relatively large (N=149, five classes) a careful review of each class suggested that with the exception of one teacher, the reported number of hours of economics instruction was probably overestimated. In all likelihood, the average classroom time spent on economics instruction was approximately 20 hours. The simple unweighted average for the four classes was 16.38.

Note: Standard Deviations are reported in parenthesis.

TABLE III A

A Comparison Between the Pre- and Post- Basic Economics Test: Student Characteristics

McDowell County

Categories	Form A	Form B
Student Characteristics		
Sex:		
Male	16.94	21.54
	(6.17)	(6.39)
Female	16.91	21.64
	(5.16)	(5.94)
Race:		
White	17.01	21.74
	(5.74)	(6.13)
Black	15.82	18.72
	(5.24)	(6.26)
Family Travel:		
Never	17.35	19.24
	(5.70)	(6.98)
Sometimes	16.63	20.67
	(5.73)	(6.02)
Often	16.00	22.76
	(5.59)	(6.10)
Family Income		
Less than $5000	14.66	17.44
	(5.58)	(6.84)
Between $5000 - $15,000	16.25	20.52
	(5.70)	(5.81)
Greater than $15,000	18.11	23.33
	(5.54)	(6.02)
Family Education		
Less than 8th Grade	12.85	17.35
	(4.90)	(5.94)
8th Grade thru 11th Grade	14.29	19.17
	(5.34)	(6.02)
High School	17.73	21.57
	(5.32)	(5.86)
Some College	18.89	25.00
	(5.84)	(5.52)

TABLE III B

A Comparison Between the Pre- and Post- Basic Economics Test:
Teacher Characteristics

McDowell County

Categories	Form A	Form B
Teacher Characteristics		
College Preparation		
Scoial Studies Courses-		
18 or more Semester hours	17.11	21.96
	(5.49)	(6.34)
Economics Courses-		
0-1 Courses	16.81	21.93
	(5.70)	(5.97)
2-3 Courses	17.88	19.55[e]
	(5.54)	(5.10)
4-5 Courses	15.74[e]	16.87[c]
	(4.57)	(5.92)
Employment Preparation		
Economics In-Service-		
0 Hours	16.59	--
	(5.67)	--
1-10 Hours	17.35	22.35
	(5.57)	(6.27)
11 + Hours	17.02	21.14
	(5.69)	(6.11)
In Class Instructional Time		
Percent Teaching Social Studies		
0-10 Percent	18.40[a]	18.30[d]
	(6.52)	(5.91)
11-15 Percent	17.28	20.78
	(6.15)	(6.34)
16-20 Percent	17.12	21.28
	(5.25)	(5.77)
21 + Percent	18.28[b]	23.50
	(4.92)	(6.01)

Note* Standard Deviations are reported in parenthesis.

TABLE III B (cont.)

A Comparison Between the Pre- and Post- Basic Economics Test:
Teacher Characteristics

McDowell County

Categories	Form A	Form B
Percent Teaching Economics (When Social Studies is Being Taught		
0-5 Percent	17.35 (6.21)	21.17 (5.57)
6-10 Percent	16.83 (5.91)	19.44 (5.64)
11-20 Percent	17.46 (5.23)	21.04 (5.50)
21 + Percent	-- --	23.00 (5.86)
Hours Teaching Economics		
10- 25 Hours	16.74 (5.64)	20.01 (5.55)
26-50 Hours	-- --	23.43 (5.61)
County Average	16.92 (5.71)	21.59 (6.18)

[a]Number of observations is 21 (one class).

[b]Number of observations is 64 (two classes).

[c]Number of observations is 30 (one class).

[d]Number of observations is 23 (one class).

[e]Number of observations is 27 (one class).

Note* Standard Deviations are reported in parenthesis.

TABLE IV

A Comparison of the Average Amount
of Training and Classroom
Delivery Between 5th & 6th Grade Teachers:
Selected Categories

McDowell County

Category	5th Grade	6th Grade
Semester Hours Earned in Economics	2.83	1.79
	(3.26)	(2.01)
	17	16
Average Number of In-Service Hours in Economics	8.71	14.00
	(6.73)	(6.89)
	17	16
Average Percent Time Spent Teaching Social Studies	18.88	20.00
	(6.23)	(9.08)
	17	16
Average Percent Spent Teaching Economics (when Scial Studies is being taught	14.41	17.70
	(6.34)	(9.08)
	17	16
Hours Spent Teaching Economics	17.06	27.90
	(7.72)	(18.37)
	17	16

Note* Standard Deviations are reported in parenthesis followed by the number of observations.

TABLE V

Analysis of Variance Between
Schools: McDowell County

Test B

Grouping	Mean	N	School
I	25.696	56	Marion
I			
I I	23.788	85	Nebo
I I			
I I	23.429	35	Eastfield
I			
I	22.403	72	Pleasant Gardens
**********	**********	**********	**********
II	20.173	75	Old Fort
II			
II II	19.691	81	Glenwood
II II			
II II	19.436	78	West Marion
II			
ii	17.517	29	North Cove

Note* Means with the same Roman Numerals are not significantly different.

Note** Although analysis of variance calls for equal all size, the large sample and the "near equality" will permit some comparison.

END NOTES

[1]Iredell County is located approximately 60 miles east of McDowell County. Both are located in the western part of North Carolina and each are similar to the other in terms of their economic base. The population of Iredell County is approximately 35,000 persons greater.

[2]For a complete accounting of the Basic Economics Test (BET), see Chizmar, John F., and Halinski, Ronald S., Basic Economics Test - Examiners' Manual, Joint Council on Economic Education, New York, New York, Checklist No. 297.

[3]In an effort to provide a more accurate comparison, the California Achievement Test (CAT) scores were obtained for each of the schools participating in the study. A simple correlation test was then run between each of the three reported CAT scores - Language, Mathematics and Reading - and the child's BET score. The intent was to determine if any one category correlated with the BET score and to use that classification for adjustment purposes (Cummings and Hoover, 1984). One group did indeed demonstrate a positive and robust correlation, the Mathematics portion of the CAT. Since McDowell County scored highest on the mathematics component of the CAT, it served as the reference county.

To compare each of the two North Carolina counties more accurately with one another would require that the ratio of the standard deviation of Iredell's Math CAT score to McDowell County's Math CAT score be calculated. This constant would then be multiplied by the two counties' BET standard deviation. The resulting value obtained would then be used to adjust Iredell County's BET scores.

Unfortunately, several broad adjustments had to be made in developing the CAT's standard deviation which, in turn, made the weighted constant highly suspect. Therefore, an alternative technique was used. The adjustment factor for each child's test score was developed by setting the ratio of the mean test score on the Math CAT for McDowell and Iredell counties equal to the ratio of the mean test score earned on the BET. The rationale for this procedure was to develop some semblence of equality between basic aptitude and the acquisition of economic knowledge. The adjustment did reduce the score of Iredell County children to 16.65. The new difference between the two scores of .28, however, was not statistically significant.

[4]See Page 6 of the Basic Economics Test - Examiners' Manual op.ct.

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